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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,738	08/25/2003	Yoshifumi Nagai	2003_1175	1782

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EXAMINER

PIZIALI, JEFFREY J

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 03/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/646,738

Applicant(s)

NAGAI ET AL.

Examiner

Jeff Piziali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/182,828.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/25/03 & 11/4/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicants' claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 10/182,828, filed on 2 August 2002.

Specification

2. The disclosure is objected to at least because of the following informalities:
Page 11, Line 8 should be changed from "deference" to "difference."
Page 13, Line 7 should be changed from "colr" to "color."
Appropriate correction is required.
3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicants' cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

4. Claim 13 is objected to because of the following informalities: Line 1 should change "withlight" to "with light." Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. The term "small amount of light" in claim 2 is a relative term which renders the claim indefinite. The term "small amount of light" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear to an artisan precisely how much light constitutes a *small amount*.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsuda et al (US 6,144,352 A).

Regarding claim 1, Matsuda discloses an image display apparatus [Fig. 1; 11] comprising light emitting elements [Figs. 2A & 2B; R, G, B, Y] corresponding to a plurality of color tones [i.e. red, green, blue, yellow] disposed in each pixel [Figs. 1, 2A & 2B; 10], wherein, a main current [Fig. 1; Main signal] for luminance control is supplied to a spontaneous light emitting element [Fig. 3; at 15R] corresponding to one of the plurality of color tones [i.e. red] in a pixel, and a correcting current [Fig. 1; Sub signal] for chromaticity correcting is added to other light emitting element [Fig. 3; at 16G] corresponding to at least one of the other color tones [i.e. green] in the pixel, wherein, the main current and the correcting current are controlled by a pulse driving period (see Column 6, Lines 10-44).

Regarding claim 2, Matsuda discloses each pixel is composed of three color tones [i.e. red, green, blue] of light emitting elements, and two color tones [i.e. red, green] of light emitting elements other than the light emitting element corresponding to the color tone [i.e. blue] to be performed chromaticity correcting emit a small amount of light to correct a dispersion of chromaticity of light emitting elements corresponding to each color tone (see Column 6, Lines 10-44).

Regarding claim 3, Matsuda discloses the three color tones of light emitting elements, of which each pixel is composed, are red, blue and green (see Column 4, Line 57).

Regarding claim 4, Matsuda discloses the main current and the correcting current are controlled by time-sharing (see Figs. 3 & 4; Column 6, Lines 30-44).

Regarding claim 5, this claim is rejected by the reasoning applied in rejecting claim 4.

Regarding claim 6, this claim is rejected by the reasoning applied in rejecting claim 4.

Regarding claim 7, Matsuda discloses the amount of light emission by the main current and the correcting current is adjusted by controlling the number of pulse driving or the ratio of frequency of reference clocks [widths of reference clock pulses] (see Figs. 3 & 4; Column 1, Lines 36-47 and Column 6, Lines 30-44).

Regarding claim 8, this claim is rejected by the reasoning applied in rejecting claim 7.

Regarding claim 9, this claim is rejected by the reasoning applied in rejecting claim 7.

Regarding claim 10, this claim is rejected by the reasoning applied in rejecting claim 7.

Regarding claim 11, this claim is rejected by the reasoning applied in rejecting claims 1, 3, and 7; furthermore Matsuda discloses in light emission of each light emitting element L_i ($i=R, G, B$) based on image data D_i ($i=R, G, B$) [Fig. 1; Red, Green, and Blue color signals] in respective pixels, amount of light emission $A_k + A'_k$ is controlled by the number of pulse driving or the ratio of frequency of reference clocks (widths of reference clock pulses), so as to add amount of light emission A'_k ($k \neq i$) of at least one of the other light emitting elements L_k ($k \neq i$)

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in the respective pixels based on amount of light emission A_i ($i=R, G, B$) of the light emitting element L_i to amount of light emission A_k ($k \neq i$) of the light emitting elements L_k ($k \neq i$) based on image data D_k ($k \neq i$) (see Figs. 3 & 4; Column 1, Lines 36-47 and Column 6, Lines 4-44).

Regarding claim 12, Matsuda discloses chromaticity of each pixel based on maximum value of the image data D_i ($i=R, G, B$) is corrected to reference chromaticity (see Fig. 5; Column 6, Lines 45-67).

Regarding claim 13, this claim is rejected by the reasoning applied in rejecting claim 1.

Regarding claim 14, this claim is rejected by the reasoning applied in rejecting claims 1, 3, 7, and 11.

Regarding claim 15, Matsuda discloses the light emitting elements are light emitting diodes (see Column 1, Lines 6-12).

Regarding claim 16, this claim is rejected by the reasoning applied in rejecting claim 15.

Regarding claim 17, this claim is rejected by the reasoning applied in rejecting claim 15.

Regarding claim 18, Matsuda discloses a driving period corresponding to one image frame is divided into three divided periods [i.e. 1st display row driving period, 2nd display row

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driving period, and 3rd display row driving period] (see Fig. 1; Column 1, Lines 36-47), wherein, a pulse driving current for color tone [i.e. red] corresponding to the light emitting element as the main currents is supplied in one of the three divided periods as a main displaying period [i.e. 1st display row driving period], and pulse driving currents for color tones [i.e. green and blue] corresponding to the other color tones to control the amount of light emission for correcting chromaticity to be added as the correcting currents are supplied in the other two of the three parts as color correcting periods [i.e. 2nd display row driving period and 3rd display row driving period], wherein, amount of light emission by the main current and the correcting currents is adjusted by controlling widths of reference clock pulses [horizontal/vertical sync, for instance] (see Column 6, Lines 10-44).

Regarding claim 19, this claim is rejected by the reasoning applied in rejecting claim 18.

Regarding claim 20, this claim is rejected by the reasoning applied in rejecting claim 18.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. Nakamura (US 6,867,757 B1), Yamauchi et al (US 6,809,714 B1), Bohn et al (US 6,618,031 B1), Clifton et al (US 6,388,648 B1), Salam (US 6,329,758 B1), Kojima et al (US 6,313,816 B1), Gwynn (US 6,259,429 B1), Greene et al (US 6,115,092 A), Yamashita et al (US 6,101,271 A), Kuriwaki et al (US 6,097,367 A), Deter et al (US 5,440,352 A), and Sasabe et al (US 3,922,711 A) are cited to further evidence the state of the art pertaining to image displays.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J.P.

7 March 2006



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